

Appl. No. 09/802,787
Amdt. Dated April 28, 2006
Reply to Office action of February 10, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method ~~for representing a root bus of a computer system,~~
comprising:
dynamically generating an object-oriented abstraction corresponding to ~~a~~ the root bus
referencing a method ~~one or more methods that obtains may be implemented to obtain and/or~~
~~generates~~ generate configuration and resource allocation information for the root bus and ~~a~~ any
subordinate bus ~~busses~~ connected either directly or indirectly to the root bus; and
registering the method ~~methods~~ referenced in the object-oriented abstraction via a data
structure stored in ~~a~~ memory of the computer system.
2. (original) The method of claim 1, wherein the object-oriented abstraction comprises
one of a C++ object or Java object.
3. (original) The method of claim 1, wherein the root bus comprises a PCI bus.
4. (currently amended) The method of claim 1, further comprising enumerating the root
bus and said any subordinate bus ~~busses~~ through use of the method ~~methods~~ that is ~~are~~
registered.
5. (currently amended) The method of claim 4, further wherein the object-oriented
abstraction includes at least one variable for storing information, further comprising storing
configuration information derived during enumeration of the root bus into said at least one
variable.
6. (currently amended) The method of claim 5, further comprising allocating resources
for the root bus, the each subordinate bus, and a device ~~any devices~~ attached to the ~~these~~ root and
subordinate busses; and

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storing information corresponding to resources that are allocated in said at least one variable for storing information.

7. (original) The method of claim 1, wherein functions of the root bus are controlled, at least in part, by a chipset having a plug-in driver, further comprising interrogating the plug-in driver to identify said plurality of methods.

8. (original) The method of claim 1, wherein functions of the root bus are controlled, at least in part, by a chipset having a plug-in driver, further comprising publishing the object-oriented abstraction via the plug-in driver.

9. (currently amended) A method for defining resource configuration information in a system that includes a plurality of root busses, comprising:
identifying each of the plurality of root busses;
defining an object oriented representation of each root bus comprising a set of components that includes references to a plurality of methods that ~~may be implemented to obtain and/or generate~~ configuration and resource allocation information for that root bus and at least a ~~any subordinate bus busses~~ connected ~~either directly or indirectly~~ to the root bus;
assigning a bus identifier for ~~each of the~~ at least subordinate bus busses through use of an enumeration process that implements one or more of the methods referenced by the object oriented representation of ~~the~~ that root bus,
wherein each of the foregoing operations is performed via execution of machine-executable instructions by the system.

10. (original) The method of claim 9, wherein the object oriented representation includes a globally unique identifier (GUID) for each root bus.

11. (original) The method of claim 10, further comprising:
creating a handle; and
storing references corresponding to the GUIDs for each root bus in the handle.

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12. (original) The method of claim 11, wherein the handle further includes indicia for each GUID identifying a location of the object oriented representation corresponding to the GUID.

13. (original) The method of claim 12, wherein the indicia comprises a pointer to the memory address at which the object oriented representation is stored.

14. (currently amended) The method of claim 9, wherein each root bus and the at least any subordinate bus busses connected ~~either directly or indirectly~~ to the root bus form a hierarchy, and wherein the enumeration process for each root bus comprises:

assigning bus identifiers as the at least subordinate bus is busses are reached while moving downward through the hierarchy; and

calculating resource requirements for the at least each subordinate bus while moving back up the hierarchy.

15. (currently amended) The method of claim 9, further comprising:

determining resource requirements for the at least each subordinate bus;

allocating the resource requirements for the at least that subordinate bus; and

setting resources for the at least that subordinate bus.

16. (currently amended) The method of claim 15, wherein the at least ~~one of the~~ subordinate ~~busses for a given root~~ bus has a peripheral device connected to it, and further wherein determining the resource requirements for the at least each subordinate bus includes determining the resource requirements of a any peripheral device ~~devices~~ attached to the at least that subordinate bus.

17. (currently amended) The method of claim 15, further comprising:

allocating resources for the each root bus based in part on the resources of the at least its subordinate bus busses; and

setting the resources for the that root bus.

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18. (currently amended) The method of claim 9, further comprising:
evaluating devices in the hierarchy of the each root bus to determine if the root bus produces ~~they produce~~ a firmware device or an optional ROM that includes ~~may include~~ BIOS corresponding to a bootable device.

19. (currently amended) An article of manufacture comprising a computer-readable medium having computer-executable instructions that when executed perform operations comprising the functions of:

generating an object-oriented abstraction corresponding to a root bus referencing a method ~~one or more methods~~ that obtains ~~may be implemented to obtain~~ and/or generates ~~generate~~ configuration and resource allocation information for the root bus and a any subordinate bus ~~busses~~ connected ~~either directly or indirectly~~ to the root bus; and

registering the method ~~methods~~ referenced in the object-oriented abstraction.

20. (original) The article of manufacture of claim 19, wherein the computer-executable instructions comprises one or more software modules including a root bus driver.

21. (currently amended) The article of manufacture of claim 19, wherein execution of the instructions further performs operations comprising the function of assigning a bus identifier for ~~each of the subordinate~~ bus ~~busses~~ through use of an enumeration process that implements ~~one or more of the method~~ methods referenced by the object oriented abstraction of the ~~that~~ root bus.

22. (currently amended) The article of manufacture of claim 21, wherein the root bus and the any subordinate bus ~~busses~~ connected ~~either directly or indirectly~~ to the root bus form a hierarchy, and wherein the enumeration process for the root bus comprises:

assigning bus identifiers as the subordinate bus is ~~busses are~~ reached while moving downward through the hierarchy; and

calculating resource requirements for the each subordinate bus while moving back up the hierarchy.

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23. (currently amended) The article of manufacture of claim 22, wherein execution of the instructions further performs the functions of:

- determining resource requirements for the ~~each~~ subordinate bus;
- allocating the resource requirements for the ~~that~~ subordinate bus; and
- assigning the resources that are allocated to the root bus that is a parent of the ~~that~~ subordinate bus.

24. (previously presented) The article of manufacture of claim 19, wherein execution of the instructions further performs the functions of:

- creating a handle; and
- storing references corresponding to a globally unique identifier (GUID) for the object-oriented abstraction and a pointer to the object-oriented abstraction in the handle.